NURSE PRACTITIONERS ATTITUDES TOWARD PROTOCOLS

by

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SUPERVISORY COMMITTEE APPROVAL

of a thesis submitted by

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FINAL READING APPROVAL

To the Graduate Council of The University of Utah:

I have read the thesis of Paula Ann Bagalio in its final form and have found that (1) its format, citations, and bibliographic style are consistent and acceptable; (2) its illustrative materials including figures, tables, and charts are in place; and (3) the final manuscript is satisfactory to the Supervisory Committee and is ready for submission to the Graduate School.

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ABSTRACT

The Nurse Practitioner Pilot Project was enacted in 1979 by the legislature of the State of Utah. The Project authorizes nurse practitioners associated with a physician and guided by approved protocols to prescribe medications for a three year pilot period. The overall goal of the project was to study the accuracy, safety and appropriateness of nurse practitioners prescribing medications using established protocols as guidelines for patient care. This research investigated the attitudes of the Nurse Practitioner Pilot Project participants toward the approved protocols.

The literature abounds with opinions of nursing professionals listing the advantages and disadvantages of protocol use, however only one attitude survey regarding the use of protocols to guide patient care was found. Grim et al., 1975 found physicians to be less favorable regarding protocol use to guide clinical practice than the nurse practitioners or physicians assistants.

All nurse practitioner participants in the Pilot

Project were mailed a questionnaire and asked to rank 30 attitude items on a scale of 1 thru 7 with t anchors: strongly disagree, disagree, undecided, agree and strongly agree. Fourty-four respondents returned the questionnaire, a response rate of 72%.

Generally the sample population believed protocols were negative in guiding health care practice. Protocols were believed to decrease time spent with clients, promote dehumanization of care and imply superficial thinking. The respondents did not want protocols mandated by law nor were standards of care believed to be assured with protocol use. Certain variables tempered the negative attitude. Specifically, however more favorable attitudes were reported from the nurse practitioner participants with more practitioner experience and the respondents who had prior experience with protocols.

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CHAPTER I

INTRODUCTION

The advent of the nurse practitioner movement in the past two decades has brought new roles and responsibilities to nursing. Responsibilities traditionally belonging to medicine but now shared by nurse practitioners have introduced questions concerning the legal responsibilities and accountability of the nurse practitioner. New laws providing legal guidance for nurse practitioners in Utah were needed to address such issues. The Utah Nurse Practitioner Conference Group was created to confront the issues concerning nurse practitioners in the State.

The Nurse Practitioner Conference Group is an organization of licensed nurse practitioners who have supported the development of the nurse practitioner role in Utah. Developing positive public relations with other health care providers in the community, supporting continuing education and defining the legal parameters of practice are the primary objectives of

the group. One major concern of nurse practitioners' in Utah has been obtaining legal prescriptive practice. The Utah Nurses Association and the Nurse Practitioner Conference group sponsored legislation initiating the Nurse Practitioner Pilot Project Act in the State of Utah. The Conference Group financially supported the evaluation process of the Project.

The Nurse Practitioner Pilot Project B Bill was prompted by the need for rural nurse practitioners to write prescriptions without the co-signature of a physician and be accountable for primary health care delivered. The law authorized nurse practitioners associated with a physician and guided by approved protocols to prescribe medications for a three year pilot period. A Governor's committee guided the enactment of the project accepting applicants, approving protocols and documenting the evaluation of the project. The overall goal of the project was to study the accuracy, safety and appropriateness of nurse practitioners prescribing medications using established protocols as guidelines for patient care. The project will continue until December 1982, at which time the Governor's Committee will issue a report to the legislature addressing the findings of the completed research and the recommendations.

Purpose

The purpose of the research was to describe the attitudes of the Nurse Practitioner Pilot Project participants toward the approved protocols. Protocols have been used extensively by nurse practitioners, physicians assistants, and physicians for years. Lewis and Lewis (1976) described protocols as "Diagramatic representations of the process of logic by which data are manipulated to reach certain conclusions" (p. 1312). Protocols can be algorithms (flow charts) which are brief and rigid in structure, or a lengthy detailed description of health care problems and the appropriate clinical management.

The protocols published in Patient Care Guidelines For Family Nurse Practitioners (Hoole A.J. Ed.) are moderate in length. Developed by assistant professors of medicine working with the University of North Carolina School of Medicine, Chapel Hill, N.C. the protocols have been used extensively by the faculty and students of the Family Nurse Practitioner Program for over 10 years. Each protocol lists common symptoms, objective findings and standard accepted plans of care for common health problems.

Safe and effective management of acute minor illness by physicians assistants and nurse practitioners through the use of protocols has frequently been

documented (Conte, 1978; Greenfield, Friedman, Scifers, Rhodes, Black, and Komaroff 1974; Greenfield, Komaroff, and Anderson 1976; Grimm, Shimoni, Harlan, and Estes 1975; Komaroff, Black, Flatly, Knopp, Reiffen, and Sherman 1974; Komaroff, Sawayer, Flatley, and Brown 1976). In spite of the favorable quality health care provided by nurse practitioners using protocols, professional opposition still exits. Attitudes about the use of protocols to guide client care range from adamant opposition, condemning protocols as an insult to the intelligence of well educated health care providers, to the promotion of protocols as a means of education and a tool for professional audit.

Rationale and Significance

Since attitudes were believed to be one factor in determining behavior, nurse practitioners' attitudes toward the use of protocols in guiding health care practice would be useful. The correlation of attitudes and behavior will be discussed extensively in the theoretical framework section of the thesis.

Opinions abound in the literature regarding the advantages and disadvantages of protocol use, however descriptive research documenting health care providers attitudes toward protocols appeared only once in the literature (Grimm et al., 1975). Considering the

research which documented safe, effective, and time saving care provided by physicians assistants and nurse practitioners using protocols, the need for thorough documentation of client care, and the development of audit procedures, protocols will probably be increasingly used by nurse practitioners. Siegel and Bullough (1977) reported that California, Tennessee, Idaho, and Washington have legislative mandates which require nurse practitioners to have policies and protocols developed when performing traditional medical acts. Positive or negative attitudes toward protocols may significantly influence a nurse practitioner's compliance with protocol directed clinical practices, protocol development and protocol reevaluation. Attitudes of nurse practioners toward the use of protocols were considered significant for future planning of educational curricula, audit procedures, and legal actions for nurse practitioners.

CHAPTER II

REVIEW OF THE LITERATURE

Empirical research documenting health practitioners' attitudes regarding protocols appeared only once in the literature (Grim et al., 1975). General opinions concerning the advantages and disadvantages of protocols guiding safe practice by nurse practitioners and physicians assistants were scattered throughout the literature. The major literature focus was protocol use as a guide for patient care and included time factors, individual freedom, intelligence and standards of care.

Time Factors

Nurse practitioner management of common acute illnesses guided by protocols has been documented to be effective and efficient (Greenfield et al., 1976; Greenfield et al., 1978; Komaroff et al., 1976). The major advantage, in addition to the quality of patient care provided by nurse practitioners using protocols, was the cost effectiveness of the care. The time a physician spent per patient was minimized

or eliminated by nurse practitioners providing the care with protocols as guides. Since the income of physicians was higher than a nurse practitioners', the provision of primary care through the nurse practitioner was cost effective by providing the same service to the client at a lesser fee. The time saving qualities provided by protocols used to guide nurse practitioners were not specified in the literature. Time factors regarding protocol use by nurse practitioners which were considered to have significant impact on nurse practitioners attitudes included: decreasing or increasing health care providers' time spent with patients, adding or detracting from the nurse practitioners time spent with paper work, and facilitating or inhibiting a smoother flow of patients through the clinical setting. These aspects of the category of time factors were important to include in the attitude survey.

Individual Freedom

The encroachment of protocols on the individual freedom of the health care provider was the next most frequently cited category in the literature. Grim et al. (1975) found that physicians frequently failed to follow written protocols. According to the authors, physicians believed that "algorithms constrain their

capabilities to define for each patient the important data to be recorded and the individualized therapy to be prescribed." (p. 510). Confinement, constraint, stifling of creativity and the prohibition of independent judgment have frequently been sited as drawbacks to protocol use (Inglefinger 1973; Lewis & Lewis 1976; and Pearson 1976). Inglefinger, (1973) the most outspoken author about protocols, identified them as restrictive and stifling in the provision of patient care.

Tornyay cited by Komoroff (1977) the advantages in the forward of the book, Common Adult Illnesses A Problem-Oriented Textbook With Protocols. "In freeing the practitioner from the concern of missing an important cue, or forgetting to collect certain data, protocols allow the health care worker to practice the art of caring for patients without the constraint of undue emphasis on technical aspects of care" (p. vii).

Intelligence

Perhaps the most disturbing remarks concerning protocol use in the management of patient care involved the fact that many practitioners found protocols insulting to the intelligence of well-educated professional health care providers. Lewis and Lewis (1976) reported that formally educated practitioners

viewed protocols as intellectual crutches. Furthermore, protocols were cited as curtailing the thinking process, hindering knowledge application and removing the decision-making process from the health care professionals when providing patient care.

In an editorial in the New England Journel of Medicine, Inglefinger (1973) stated that support of protocols implied that a medical college degree in providing patient care was unnecessary. Understanding of the disease process was not necessary when protocols were used as guides, implying medicine could be practiced appropriately by anyone able to read.

Most supporters of protocol use in patient care management agreed that the development and reevaluation of protocols stimulated cognitive thought and provided an educational experience. Many authors encouraged nurse practitioners to write specific protocols for the experience of developing such a guide and thus controlling the quality of clinical practice (Komaroff et al., 1974; Paxton et al., 1978, Pearson 1976; Siegel & Bullough 1977).

Standards of Care

Komaroff et al. (1974) reported the safe management of hypertensive clients by nurse practitioners and physicians assistants using protocols. Protocols were cited as tools used to educate, guide and audit

the performance of physicians assistants. Because a discrepancy between a protocol and the actual practice of a health care provider may exist, direct observation by physicians monitoring quality of care was recommended. Protocols could help set a certain basic standard of care without acting as a constraint. Sox et al. (1973) has described how the completeness and appropriateness of data collection could be evaluated when physicians' assistants used protocols in providing client care. The research was quite extensive, auditing 3,024 charts and using eleven protocols to assess the management of various diseases. By providing a basis for education and a method for assessing reliable and thorough health care a protocol could provide clear step by step instructions guiding the solution of clinical problems. Sox et al. (1973) admitted a limitation in the use of clinical algorithms, in managing client care, i.e., "they do not measure clinical accuracy of observations and are restrictive, managing only acute illness". Protocols could be used to guide one component of a clinical support system for the paramedical profession. Grim et al. (1975) studied a protocol for pharyngitis used by 10 physicians, 3 physicians assistants and one nurse practitioner in a group practice. Improvement was observed in the collection of more complete medical

data, utilization of advised laboratory tests, and appropriate use of antibiotics after the introduction of the protocol. A more precise diagnosis was made by all providers when following protocols. The major thrust of the report was the evaluation of the pharyngitis protocol and a comparison of protocol compliance between various health care providers. An average of 88 charts was audited weekly and the results of the protocol compliance assessment communicated to the providers being evaluated. An attitudinal survey confirmed that most providers accepted protocol guidance for practice. Physicians failed to follow written protocols more often than other providers and were less positive about the development of protocols for other health care problems. Grimm et al. (1975) concluded that physicians view protocols as a means of assuring minimal performance standards for physicians assistants or students but not as standards for physicians. Most physician's assistants indicated the desire for additional protocols in the clinic setting.

Paxton and Scoblic (1978) and Pearson (1976) have written articles supporting protocol logic. Support of the use of protocols by nurse practitioners was emphasized because of the educative value, the audit of health care practice and the facilitation of communication among professionals. Siegel and

Bullough (1977) supported protocols for similar reasons and emphasized that many states have legislative mandates that require written protocols to guide the practice of nurse practitioners. Komoroff in the forward of the book, Common Adult Illnesses A Problem-Oriented Textbook With Protocols (Komoroff, 1977) supported the use of protocols. Valued as educational tools, documentation of standards of care, legal safeguards, and devices to increase communication among professionals, the use of protocols was encouraged by all health care providers. Lewis and Lewis (1976) qualified a positive stance by stating that protocols should be used by highly skilled practitioners with adequate technical support (i.e.; roentgenogram, laboratory equipment). In contrast Lewis and Lewis (1976) reported that well educated nurse practitioners believed protocols could create a false sense of security regarding quality of care and were solely useful as a defense against legal action.

A wide range of attitudes about protocols guiding health care practice were represented in the literature by a small number of health practitioners. More general representation of nurse practitioners' attitudes is necessary to have more accurate knowledge of attitudes.

CHAPTER III

THEORETICAL FRAMEWORK

The focus of the study was the relationship between nurse practitioners' attitudes toward protocols and the influence of the protocols on behavior. The definition of the word "attitudes" is especially important because of the synonomous relationship of the concept "attitude" with "belief, opinion or value." Most authors do not differentiate between the concepts since empirical research has not shown a distinction between the definitions of the words. Fishbein and Ajzen (1972) advocated a precise definition of the word "attitude," identifying 500 different operations used to measure the concept. The belief that a single label attached to so many different and unrelated measures leading to contradiction and confusion was justifiable.

Although attitudes traditionally have been defined with the components of cognition, affect, and conation (behavior intention), few researchers have distinguished the difference between the components. Sims (1981) described the essence of an attitude as an individual's

affective or emotional component, which encompassed overall perceptions for an attitude object. An attitude was defined by Sims (1981) as "the affective component of an individual's perception of a concept." A "belief" was defined as the probability that such a concept exists. The interrelated concepts depicted in Figure 1 by an attitude theory model were affect, cognition, attitude and belief which ultimately influenced the attitude object. The major influencing factor composing an attitude was the affective or em-emotional component of a perception. Affect and cognition were opposite concepts with affect considered analogous to the emotional component of a perception and cognition considered analogous to the factual component of a perception. Closely related to the notion of cognition was belief, while the notion of attitude was more closely aligned with the affective or emotional component of concept. The importance of a precise definition of an attitude becomes evident when the reports of the link between an attitude and behavior are examined. Sims (1981) in a review of the literature found attitudes frequently stated as precursors of behavior, but little empirical data were available which supported the concept. Several researchers supported the attitude--behavior relationship in spite of the lack of empirical data. The most

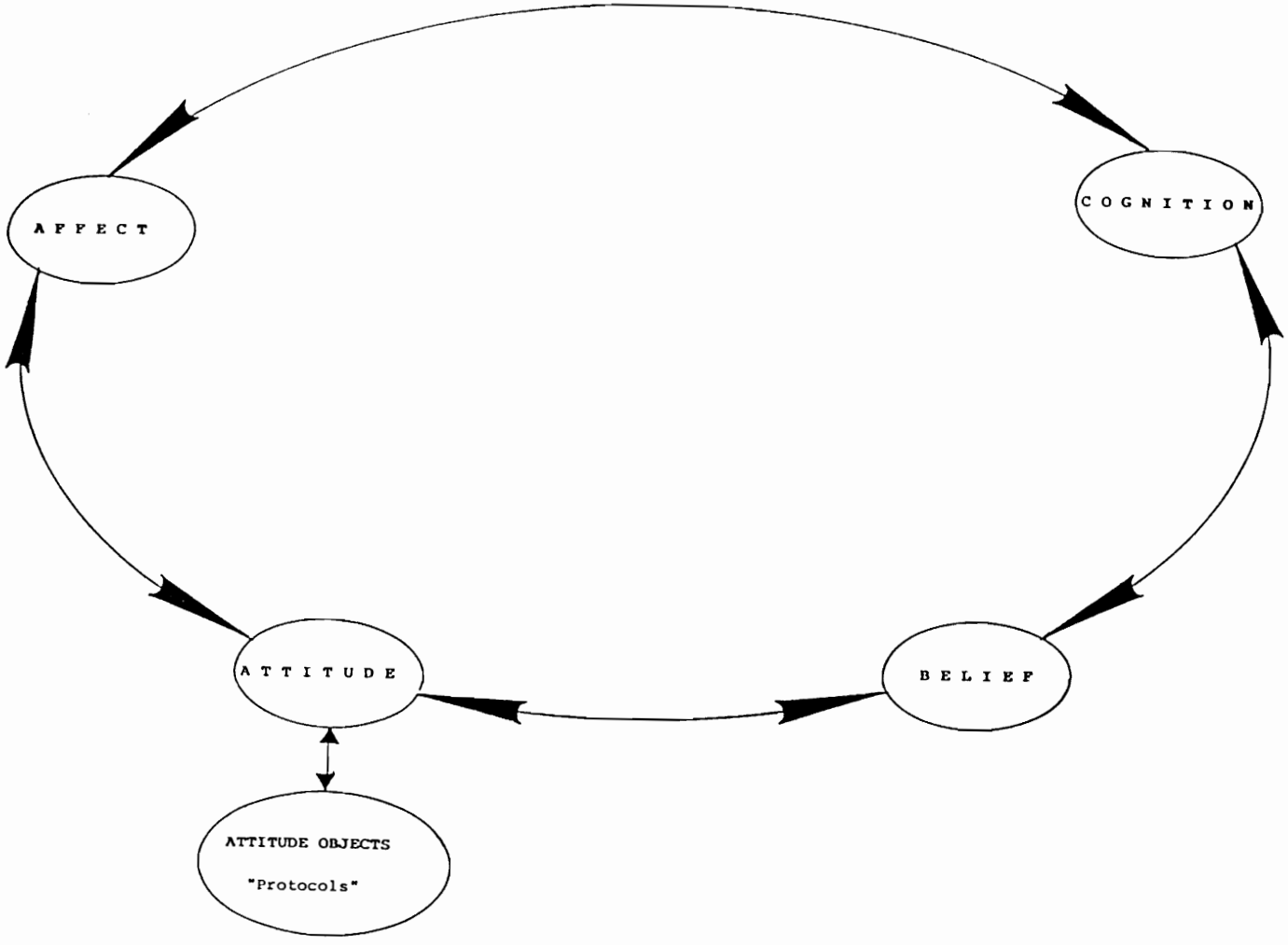

Figure 1. Attitude theory model

widely accepted view was that an attitude is a complex concept consisting of cognitive, affective and conative parts which need to be measured to predict behavior. Uncontrolled variables in many investigations accounted for the poor correlation between attitudes and behavior found by earlier researchers. For example different intellectual levels and various situational factors were listed as uncontrolled variables (Sim 1981).

Other investigators believed the attitude--behavior correlation existed but attitudes alone were not a sufficient cause for behavior. Other factors such as social norms, personal habits and individual expectations about reinforcement were cited as factors motivating behavior (Triandis 1971).

Fishbein (1973) in a theoretical reanalysis of the attitude-behavior relationships argued in support of the attitude--behavior link. The cause of the inconsistancies in the research was a failure to clearly define beliefs and attitudes and the lack of a specific measurement of the behavioral criteria. Fishbein (1973) argued that the explanation of the exact nature of what attitude and what behavior was extremely important. If the behavior was relevant to the attitude under consideration, a relationship between the two could be predicted.

Kahle and Berman (1979) published research sup-

porting the argument that attitudes cause behavior. A questionnaire was administered to 462 college students. Each student responded to the attitude questions in four catagories which had corresponding behavior questions concerning religion, alcohol intake, Fords' presidential candidacy and Carters' presidential candidacy. The results clearly showed the attitudes of the respondents had causal predominance over the behaviors.

The research reported thus far, although inconsistent in substantiating the attitude--behavior link, indicated moderate support for the attitude--behavior relationship. This was particularly evident in the most recent publications of Fishbein (1973) and Kahle and Berman (1979).

Conceptually the attitudes of the nurse practitioner participants regarding the protocols and addendums used for guidance in the Nurse Practitioner Pilot Project could have had a tremendous impact on the adherence of the participants to protocol guidance. Positive attitudes toward ptotocols theoretically could have contributed significantly to meticulous protocol adherence regarding diagnosis, treatment and prescriptive practice. Conversly negative attitudes regarding protocols could have contributed significantly to poor protocol adherence regarding diagnosis, treat-

ment and prescriptive practice. The current law allows nurse practitioner Pilot Project participants to prescribe drug therapies according to specific protocols. Theoretically the nurse practitioner participants' attitudes about the protocols and addendums used for prescriptive practice guidance in the Project could have significant influence on the sample population's compliance with the Utah prescriptive practice law.

Research Questions

1. What are the attitudes of nurse practitioner participants in the Nurse Practitioner Pilot Project toward protocols?
2. What are the attitudes of nurse practitioner participants in the Nurse Practitioner Pilot Project toward the effect of protocols on intelligence, individual freedom, time factors, and standards of care?

Operational Definitions

Nurse Practitioner Participants. Any Nurse Practitioner who has been accepted to participate in the Nurse Practitioner Pilot Project in the State of Utah.

Attitude. A perception of favorableness or unfavorableness toward a concept measured along

along an evaluative continuum of: strongly disagree, disagree, undecided, agree, strongly agree.

Nurse Practitioner Pilot Project. A three year law legalizing prescription writing for licensed Utah nurse practitioners associated in a health care practice with a participating physician.

Protocols. The management of health care problems outlined in Patient Care Guidelines For Family Nurse Practitioner (Hoole A.J. Ed. 1976) and addendums.

Time Factors. The elements that increase or decrease the length of time required for the health care provider to complete direct patient service and documentation of patient care.

Individual Freedom. The individual nurse practitioners' ability and right to choose or decide important data to be recorded and the individualized therapy to be prescribed for each client seen in the practice.

Intelligence. An individual nurse practitioners' capacity to comprehend and retain information applying the concepts to clinical health care practice.

Standards of Care. The accepted are principles of health care practice used to measure the quality of professional health care provided for clients.

CHAPTER IV

METHODS AND RESEARCH DESIGN

Design of the Study

The design was a descriptive investigation employing a mailed questionnaire for the purpose of eliciting attitudes regarding specific protocols of nurse practitioner participants in the Nurse Practitioner Pilot Project. The Nurse Practitioner Pilot Project Act authorizes accepted nurse practitioners associated with a physician and guided by approved protocols to prescribe medications for a three year pilot period. During this three year duration data will be gathered regarding the project and based on this data a law will be proposed for the continuation of the privilege of prescriptive practice by nurse practitioners. Attitudes of the nurse practitioner participants toward the specific protocols and addendums used to guide the nurse practitioners in the Pilot Project were considered important information in guiding the development of continued legislation.

Study Population

The rationale for including all nurse practitioner participants in the Nurse Practitioner Pilot Project was to assure enough questionnaire returns for a sample of sufficient size to perform an adequate analysis. Therefore the population was all the nurse practitioners presently participating in the Utah Nurse Practitioner Pilot Project as well as former participants who have left the project. The group of nurse practitioners participating in the project were selected by the Governor's Committee who mailed information and an application form to all nurse practitioners' licensed to practice in the state of Utah. A current list of licensed nurse practitioners was obtained from the Department of Registration, Business Regulation, State of Utah. The participants who applied and met the committees' criteria were accepted to participate in the project. The criteria for acceptance included: satisfactory completion of a formal educational nurse practitioner program, licensure to practice as a nurse practitioner in the State of Utah, and current clinical practice as a nurse practitioner in collaboration with a physician in the State of Utah. The total number of participating nurse practitioners in the Pilot Project was 61.

Instrument

Only one documentation of an attitude survey was found in the literature (Grimm et al., 1975). Since the instrument used in the reported survey was not available, the questionnaire for this research was an original design by the investigator.

The initial information asked of the respondent was demographic data. The data elicited were the level of education of the nurse practitioner participants, years of experience as a nurse practitioner, the practice setting, prior experience with protocol use, the average number of patients seen by the nurse practitioner each day, the frequency of the physician's direct contact with the nurse practitioner and the total number of colleagues in the practice setting.

All the information used to design the questionnaire was taken from the literature. All the published information included the advantages and disadvantages of protocol use in guiding client ease. Ideas were chosen from the literature and statements were developed expressing a wide range of attitudes and concepts. Several informal interviews with colleagues produced ideas and attitudes similar or identical to the broad concepts already stated in the literature. Eighty attitudinal statements were originally focusing on the four concepts of intelligence, individual

freedom, time factors and standards of care. An equal number of positive and negative statements about attitudes were included. The items were then critiqued according to content and analyzed to insure that only one concept was elicited per statement. A 30 statement questionnaire was designed by the investigator including 15 positive and 15 negative statements. A Likert scale was used to measure the degree of favorableness. Each item was ranked by the respondent on a seven point scale with five anchors from "strongly disagree" to "strongly agree".

The instrument was not pilot tested prior to use. Henderson, Morris and Fitz-Gibbon (1978) recommended pilot testing an original instrument with 50 or more subjects who were familiar with the concepts and similar to the population under investigation. The numbers of nurse practitioners available in Utah was very small. A pilot test would require identifying nurse practitioners in other states following similar protocols.

Content validity concerned the representativeness of the attitude questionnaire about all the possible existent attitudes about protocols. Since all the concepts discussed in the literature were contained in the questionnaire, content validity was judged to have been achieved. Face validity refers to the

superficial validity achieved by an individual simply reading the questionnaire and judging the contents present. This instrument was judged to have had face validity.

Crombacks' Alpha reliability analysis was computed on each item and is shown in Table 1. The total item alpha was .97 indicating a highly reliable tool. Table 1 indicates the alpha value for each item implying that the instrument measured each single component reliably within the population sample. The precise measurement of an attitude by the alpha value cannot be absolutely assured, however the fact that the tool had content and face validity highly suggested that an attitude was measured.

Procedure

The data were collected from November 10, 1981 to December 15, 1981. The questionnaire, a cover letter of implied consent and a self addressed stamped envelope were mailed to all respondents in the sample. A phone call encouraging the return of the questionnaire was made to the participants who did not respond in 10 days after the original mailing and the acceptance into the research project closed one month later.

Table 1

Crombach's Alpha Reliability Analysis

of Questionnaire Items 1 - 30

Item Total	Item Correlation	Item Total	Item Correlation
1	.76	16	.38
2	.52	17	.77
3	.74	18	.44
4	.89	19	.67
5	.40	20	.78
6	.84	21	.79
7	.61	22	.79
8	.82	23	.88
9	.84	24	.74
10	.40	25	.53
11	.85	26	.64
12	.69	27	.67
13	.90	28	.87
14	.58	29	.90
15	.64	30	.65

Note. Crombach's Alpha = .97 - inter-item reliability

CHAPTER V

DATA ANALYSIS AND FINDINGS

Sample and Questionnaire Return

The questionnaire consisted of thirty attitude items which were ranked by the respondent on a seven point scale with anchors of "strongly disagree" to "strongly agree." The population was a convenient sample of all the nurse practitioners presently participating in the Utah Nurse Practitioner Pilot Project as well as former participants in the Project. Questionnaires were mailed to 61 nurse practitioners in the Pilot Project. Certified Nurse Midwives (CNM) were part of the sample and considered nurse practitioners for this study. Forty-four questionnaires were returned over a two month period which gave a response rate of 72%.

Data Analysis

The computer data analysis was accomplished according to the outline on Figure 2. Demographic data will be discussed in the following order: educational background of the nurse practitioner, the

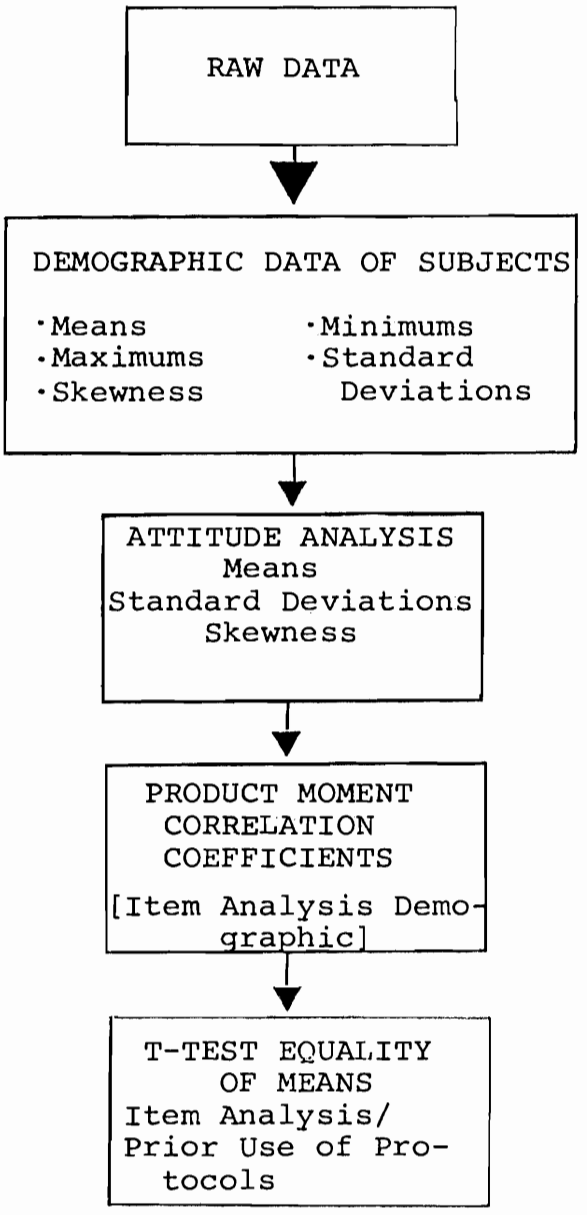

Figure 2. Process of data analysis

practice setting, prior experience with protocols, frequency of direct contact with the participating physician, years of nurse practitioner experience and number of patients seen by the nurse practitioner per day. The Product Moment Correlation Coefficients for the demographic catagories and the overall attitude about protocol use will then be discussed. Additional data collected during the investigation will be presented. Then data will be analyzed and discussed under the concepts of time factors, individual freedom, intelligence and standards of care.

Product Moment Correlation Coefficients were calculated between each questionnaire item and the demographic data. Correlation Coefficients of -/+ .28 or greater are considered statistically significant ($p. < .05$) in this study with the given sample size.

Since prior experience with protocols may significantly affect the attitude of a nurse practitioner, the differences in attitudes between the group with prior experience and the group without prior experience is of interest. A t-test (two way analysis) was calculated comparing the differences in the item means between the two groups. Five out of 30 items proved significant with a P value of .04 or lower, indicating the probability that the items were significant due to chance alone was four out of 100.

Demographic Data

Nurse practitioners are in the unique position of having a varied educational preparation leading to practice. Basic nursing preparation for practice as a registered nurse includes a diploma (hospital based training), an associate degree or a bachelor of science degree in nursing. Nurse practitioners must have additional educational preparation in a baccalaureate, a certificate or masters degree program in nursing. Table 2 presents the percentages of the sample populations' preparation. The major distinction in the education of the sample population is that 20 (45%) of the participants had master degrees, 19 (43%) had certificates from a continuing education program which could include diploma or bachelor of science degree and 5 (11%) had baccaleaureate degrees only. Due to the varied educational preparation of the nurse practitioner participants, an analysis of variance procedure was calculated with the attitude means of the sample population and the level of education. No statistical significance was found in the Pilot Project participants' attitudes and the educational preparation for the role of a nurse practitioner.

Table 3 illustrates the number of years of experience of the nurse practitioner participants with a minimum of one year and maximum of 12 years. The

Table 2

Nurse Practitioner Participants'

Educational Preparation

N = 44	Freq.	Freq. %
Master of Science in Nursing	20	45%
Certificate	19	43%
Bachelor of Science in Nursing	5	11%

Table 3

Years Experience of Nurse Practitioner Participants in the Pilot Project

N = 44	Number years Experience
Range	1 - 72
Mean	4.9
Standard Deviation	2.8
Skewness	.57

mean years of experience as a nurse practitioner was 4.9. Table 4 illustrates the practice setting of the sample population. The most striking fact in this table was that 35 (80%) of the nurse practitioner participants were located in an urban setting with a population of treater than 20,000. Only 8 (18%) of the population participants investigated were considered rural or located in a populated area of less than 12,000. Most of the sample population had prior experience in using protocols (Table 5). Thirty three nurse practitioners or 75% indicated prior use.

The number of clients treated per day by a nurse practitioner ranged from 1 to 35 with a mean of 7.5. The standard deviation of 7.5 illustrated a large variability from practice to practice (Table 6).

Table 7 shows that 33 (75%) of the sample population had daily contact with a physician indicating that the majority of nurse practitioners in the study had daily access to consultation with a physician. Very few practitioners consulted a physician weekly (6 or 14%) or bimonthly (3 or 7%).

Table 8 indicates the total number of health care providers per setting. The data were divided to illustrate the number of different professionals in the practices. Nurse practitioners were the largest group represented (Range 1 to 15: mean 4.9) and physicians,

Table 4

Practice Setting of Nurse Practitioner Participants in the Pilot Project

N = 44	Freq.	Freq. %
Rural pop: Greater 12,000	8	18%
Small City, pop: 12,000-20,000	1	2%
Urban pop: Greater 20,000	35	80%

Table 5

Prior Experience of Nurse Practitioner

Participants with Protocols

N = 44	Freq.	Freq. %
Has had prior experience with protocols	33	75%
Has <u>not</u> had prior experience with Protocols	11	25%

Table 6

Number of Clients Treated Per Day Per Nurse Practitioner Participant

N=44	Number of Patients/Day
Range	1-35
Mean	14.1
Standard Deviation	7.5
Skewness	.28

Table 7

Frequency of Nurse Practitioner

Contact with M.D.

N = 44	Freq.	Freq. %
Daily	33	75.0%
2 - 4 times a week	2	4.5%
Weekly	6	13.6%
Monthly	0	0.0%
Bi-Monthly	3	6.8%

Table 8

Total Number of Health Care Providers

Per Practice Setting

N = 44	Mean	Range	Standard Deviation	Skewness
Nurse Practitioners	4.90	1-15	6.40	0.90
Physicians' Assistant	0.25	0-3	1.40	6.40
Physicians	2.30	1-8	2.80	0.84
Certified Nurse Midwife	0.20	0-4	0.85	4.32
Unspecified Practitioners	0.98	1-8	2.00	2.24

the next largest (Range: 1 to 9; mean 2.3). Physicians assistants and certified nurse midwives were poorly represented in this research.

Correlation of Protocol Attitude of Nurse Practitioner Participants and Years of Experience

The sample reflected negative attitudes toward the use of protocols exemplified when the Product Moment Correlation Coefficients were calculated between attitudes toward protocols and the demographic categories. The significant negative coefficients were -.36, -.40, -.38, -.33 with the categories of number of years experience, the number of nurse practitioners per practice, the number of medical doctors per practice and the total practice size respectively (Table 9).

Additional Data

Two respondents chose not to complete the questionnaire but returned the document with comments. The remarks reflected a generally negative attitude toward protocols such as: "Protocols should be guidelines and not restrictive; no two physicians ever approach a problem or solve a problem the same way; the book given us was good but should not be viewed as the ultimate; and as I stated earlier

Table 9

Correlation of Protocol Attitude of Nurse Practitioner Participants and Demographic Data

Product Moment Correlation Coefficients (N = 44)	Overall Attitude
Number of years experience per practitioner	-.36
Number of Patients treated per day per practice	-.19
Number of Nurse Practitioners per practice	-.40
Number of Medical Doctors per practice	-.38
Number of certified Nurse midwives per practice	.15
Number of unknowns per practice	.27
Total Practice Size	-.33

patients are people and not a textbook." The second respondent stated: "Circumstances alter cases; and protocols are mindless."

Time Factors

Four items out of 30 addressed the efficiency of time and the use of protocols (Table 10). The nurse practitioners tended to agree that the use of protocols resulted in less time spent with patients (mean 5.18). The other three items, two of which were positive statements regarding the time saving aspect of protocols and one representing a negative attitude regarding the efficiency of protocols, had means between 3.93 and 4.16 which indicated the sample was basically undecided. Although the sample was undecided about protocols maximizing the time spent by the nurse practitioner with the client, providing a quick reference and increasing the charting time, protocols were generally agreed to decrease the time spent with clients.

The most significant correlations between the time factors and the demographic data were negative, with item one addressing written protocols as efficient and time saving devices for the nurse practitioner as the most negative -.28 (Table 11). The most significant negative correlations concerned the greater the

Table 10

Time Factors

Item Number	Protocols (N = 44)	*Mean	Standard Deviation	Skew-ness
1	Maximize time	4.16	1.20	-.36
10	Decrease time with clients	5.18	1.87	-1.21
22	Provide quick references and faster client flow	3.93	1.90	-.39
26	Increase paperwork time	4.09	.32	2.09

*Seven point scale, five anchors. Scores have been adjusted such that a higher number represents a more positive (favorable) opinion response.

Table 11

Correlation of Time Factors

and Demographic Data

Product Moment Correlation Coefficients (N = 44)		No. of yrs. experience	No. Pt's treated/ day	No. of Nurse practitioners/ practice	No. of M.D.'s practice	Total practice Size
Item Number	Protocols					
1	Maximize Time	-.28	-.08	-.43	-.44	-.37
10	Decrease time with clients	-.01	-.25	.02	-.11	-.03
22	Provide quick references and faster client flow	-.21	-.23	-.40	-.36	-.31
26	Increase paper-work time	-.16	.11	-.26	-.27	-.22

number of physicians (-.44) and the greater the number of nurse practitioners (-.43) in the practice the less efficient and time saving were the use of protocols. The negative correlation found with the larger total practice size (-.37) followed the same pattern. A milder negative correlation was found with the greater the number of years of experience (-.28) of the nurse practitioner participants.

Generally a negative correlation was found with item 22 addressing protocols as allowing an efficient reference supporting a faster flow of patients. The greater the number of nurse practitioners and physicians per practice the less protocols were believed to aid the flow of patients (-.40, -.36 respectively).

Individual Freedom

Seven items out of 30 addressed the category of individual freedom (Table 12). The sample agreed that protocols promoted dehumanization of care item 23 (mean 5.02) and item 6 (mean 5.20) and that individual judgment was not necessary (item 19 mean 5.75) with protocol use. Subjects could not decide if protocols stifled clinical judgment, promoted creativity or constrained the nurse practitioner in the delivery of primary health care.

Negative correlation coefficients were found with items 3 and 23 indicating that protocols were

Table 12

Individual Freedom

Item Number	Protocols N=44	Mean	Standard Deviation	Skew-ness
3	Constrain the Nurse Practitioner	3.77	1.99	-.17
5	Encourage freedom of practice	3.02	1.86	.10
6	Produce mechanized providers	5.20	1.97	-1.46
19	Discourage indepen-dent judgment	5.75	1.94	-2.08
23	Promote dehumanized care	5.02	2.03	-1.38
28	Allow creativity	4.14	1.86	-.75
29	Stifle clinical judgments	4.50	2.02	-.84

constraining to the nurse practitioner (Table 13). For example, the greater the number of years of experience the less the nurse practitioners agreed that protocols were constraining, item 3 (-.32), or promoted dehumanization of care, item 23 (-.48) and item 6 (-.46).

Negative correlations were also found with total practice size and the use of protocols. The greater the number of practitioners, the less protocols were believed to stifle clinical judgment (item 29 - .26) and the less protocols dehumanized care, item 23 (-.31) and item 6 (-.30). This negative correlation pattern followed with the increase in number of nurse practitioners and physicians per practice.

The greater the years of experience and the greater the number of nurse practitioners per practice, the less protocols promoted or enhanced creativity of the nurse practitioner.

Items 5 (protocols encourage the freedom of practice) and 28 (protocols allow creativity) had P values of .01 and .02 respectively implying nurse practitioners with prior protocol experience believed protocols increased creativity and serve as a basic guide in the provision of care. The P. values for

Table 13

Correlation of Individual Freedom

and Demographic Data

Product Moment Correlation Coefficients (N - 44)		No. of yrs. experience	No. Pt's treated/day	No. of Nurse Practitioners/practice	No. of M.D.s per practice	Total Practice Size
Item Number	Protocols					
3	Constrain the Nurse Practitioner	-.32	.14	-.30	-.31	-.26
5	Encourage freedom of practice	-.08	-.11	-.23	-.09	-.16
6	Produce mechanized providers	-.46	-.22	-.32	-.37	-.30
19	Discourage independent judgment	-.26	-.27	-.16	-.15	-.08
23	Promote dehumanized care	-.48	-.19	-.39	-.35	-.31
28	Allow creativity	-.26	-.13	-.32	-.28	-.24
29	Stifle clinical judgments	-.30	-.20	-.45	-.39	-.36

items 5 and 28 are shown on Table 14.

Intelligence

Nine items out of 30 addressed the category of intelligence. The most significant finding in this category was that the sample agreed that protocols implied superficial thinking supporting mechanical behavior (item 13, mean 5.07) (Table 15). Mild attitude agreement was found with item 4 stating protocols are insulting to a nurse practitioners' intelligence (mean 4.07) and with item 30 which denied the individual competency variation of nurse practitioners when protocols were used to guide patient care (mean 4.64).

In evaluating the educational aspects of protocols, the sample was mildly concerned about protocols becoming a substitute for an education (item 27, mean 4.48), and mildly disagreed that protocols augmented a nurse practitioners' education (item 7, mean 3.66). However agreement was indicated about the interdisciplinary development of protocols increasing communication and understanding among professional colleagues (item 9, mean 4.93).

The greater the number of years of experience the nurse practitioner had, the less the belief that protocols implied superficial thinking (item 13, -.41) or

Table 14

T-test of Equality of Means between Protocols Encouraging Freedom and Allowing Creativity (Significant Differences - 2-Tail Analysis)

Item Number	Protocols (N=44)	Prior Experience	N	Mean	S.D.	T	p
5	Encourage freedom of Practice	Yes	33	3.55	1.70	3.66	$<.01$
		No	11	1.45	1.44		
28	Allow Creativity	Yes	33	4.52	1.80	2.47	.02
		No	11	3.00	1.61		

Table 15

Intelligence

Item Number	Protocols	Mean	Standard Deviation	Skewness
4	Insult Intelligence	4.70	1.97	-1.03
7	Augment Education	3.66	1.88	- .42
9	Promote interdisciplinary understanding	4.93	1.88	-1.10
11	Guide clinical judgment	4.68	1.65	-1.37
13	Promote habitual thinking	5.07	1.91	-1.32
15	Require pertinent education for appropriate use	4.75	1.75	- .93
24	Encourage cookbook approach	4.11	2.13	- .40
27	Substitute for formal education	4.48	2.10	- .69
30	Ignores competence variation	4.64	2.12	- .65

were insulting to the nurse practitioners' intelligence (item 4, -.36) (Table 16). A negative correlation existed between the number of years of nurse practitioner experience and item 27 (concern that protocols would become a substitute for an education: -.31). A mildly negative correlation existed between the number of years experience and the fact that protocols encouraged a cookbook approach to the provision of health care (item 24, -.29).

A correlation of -.32 (item 9) indicated that the greater the number of years experience a nurse practitioner had, the less the belief that a protocol would increase interdisciplinary understanding among health care providers. The nurse practitioners with the greatest experience did not believe that protocols augmented education (item 7, -.28).

The larger the practice size the less the participants believed protocols were insulting to intelligence (item 4, -.42). However the conjoint development of protocols was not believed to contribute to an increase in interdisciplinary understanding among professional colleagues (item 9, -.34). Protocols were not believed to help focus and guide the thought processes of nurse practitioners in providing patient care (item 11, -.30). This pattern continued when the negative correlation coefficients were noted for item 11 and the number of

Table 16

Correlation of Intelligence with Demographic Data

Item Number	Protocol	Product Moment Correlation Coefficients N=44				
		No. yrs. Experience	No. pts. treated per day	No. of Nurse Practitioners/Practice	No. of M.D.s per practice	Total Practice Size
4	Insult Intelligence	-.36	-.24	-.48	-.47	-.42
7	Augment Education	-.28	-.14	.24	-.19	-.16
9	Promote Interdisciplinary Understanding	-.32	-.27	-.45	-.38	-.34
11	Guide clinical judgment	-.22	-.25	-.37	-.35	-.30
13	Require pertinent education for appropriate use	-.41	-.16	-.36	-.35	-.28
15	Require pertinent education for appropriate use	-.02	-.14	-.24	-.23	-.22
24	Encourage cookbook approach	-.29	.01	-.28	-.30	-.22
27	Substitute for formal education	-.31	-.09	-.32	-.29	-.24
30	Ignore competence variation	-.12	.06	-.18	-.13	-.09

nurse practitioners and physicians per practice as well as the total practice size (-.37, -.35, -.30 respectively). The greater the number of nurse practitioners and physicians and the larger the total practice size, the less the study population believed conjoint development of protocols contributed to better professional understanding (item 9, -.45, -.38, -.34). The sample believed that protocols were less insulting to intelligence with the greater the number of nurse practitioners and physicians per practice as well as the larger the total practice size (item 4, -.48, -.47, -.42). The greater the number of nurse practitioners and physicians per practice, the less belief was documented that protocols may become a substitute for education (item 27, -.29, -.32).

Nurse practitioners with previous protocol experience supported other nurse practitioners needing a pertinent educational background to use protocols appropriately (P. .02 item 15). Similarly nurse practitioners with prior experience believed protocols guided the thought processes toward appropriate clinical judgments (P. .04, item 11). Finally nurse practitioners with prior protocol experience stated the development of a protocol jointly with other health care professionals promoted communication and understanding among the professions in the practice

setting (P. 04 item 9). The P. values for items 9, 11, and 15 are shown on Table 17.

Standards of Care

Ten items of the 30 addressed the the category of standards of care. One of the strongest attitudes found regarding protocols was the disagreement that protocols should be mandated by law (item 2, 2.86 mean) (Table 18). The sample also did not believe that protocols freed the nurse practitioner from concern about missing an important cue in patient care management (item 16, mean 2.93). Protocols were not cited as assuring high standards of care and no protocol guidance was believed to be better than rigid adherence to protocols (item 8, 4.68 mean, item 25, 3.27 mean). The other items elicited undecided responses.

The coefficients showed a strong correlation in the greater the years of experience, the less the use of protocols created a false sense of security (item 17, -.49) and were helpful in documentation and accountability (Table 19). The greater the experience the less the nurse practitioners believed protocols provided valuable information (item 20, -.45) and the less protocols represented an attempt by physicians to limit nurse practitioners. The greater the number of

Table 17

T-test of Equality of Means of Intelligence Components

(Significant Differences - 2-Tail Analysis)

Item Number	Protocols (N=44)	Prior Experience	N	Mean	S.D.	T	p
9	Promote interdisciplinary understanding	yes	33	5.27	1.77	2.17	.04
		no	11	3.90	1.92		
11	Guide clinical judgment	yes	33	4.97	1.55	2.08	.04
		no	11	3.82	1.72		
15	Require pertinent education for appropriate use	yes	33	5.09	1.63	2.35	.02
		no	11	3.73	1.79		

Table 18

Standards of Care

Item Number	Protocols	Mean	Standard Deviation	Skewness
2	Should be mandated by law for nurse practitioners	2.86	1.77	.77
8	Are an attempt by physicians to limit nurse practitioners	4.68	1.94	-1.01
12	Should not be rigidly adhered to	3.61	1.86	- .02
14	Provide trustworthy guides	4.09	1.90	- .62
16	Relieve omission concerns	2.93	1.60	.19
17	Create a false sense of security	4.20	1.90	- .88
18	Attempt by physicians to promote the nurse practitioner role	4.02	1.86	- .49
20	Provide valuable information	4.84	1.82	-1.36
21	Guide accurate documentation	4.79	1.76	-1.12
25	Assure high standards of care	3.27	1.8	.30

Table 19

Correlation of Standards of Care and Demographic Data

Item Number	Protocol	Product Moment Correlation Coefficients N=44				
		No. yrs. Experience	No. pts. treated per day	No. of Nurse Practitioners/Practice	No. of M.D.s per practice	Total Practice Size
2	Should be mandated by law for nurse practitioners	-.21	.08	-.28	-.34	-.26
8	Are an attempt by physicians to limit nurse practitioners	-.32	-.26	-.36	-.37	-.32
12	Should not be rigidly adhered to	-.16	-.18	.27	-.34	-.33
14	Provide trustworthy guides	-.25	-.32	-.13	-.03	-.08
16	Relieve omission concerns	-.13	.19	.03	.09	.07
17	Create a false sense of security	-.49	-.13	-.25	-.21	-.20
18	Attempt by physicians to promote the nurse practitioner role	-.01	-.07	-.10	-.11	-.09
20	Provide valuable information	-.45	-.36	-.35	-.40	-.30
21	Guide accurate documentation	-.35	-.34	-.40	-.39	-.33
25	Assure high standards of care	-.27	-.17	-.33	-.31	-.31

patients treated per day, the less the nurse practitioners believed protocols provided valuable information (item 20, -.36), helped in charting documentation and were reliable in the guidance of patient care (item 14, -.32).

The larger the total practice size, the less the sample believed that protocols were helpful in charting documentation (item 21, -.33) and the provision of valuable information (item 20, -.30). The larger the total practice the less nurse practitioners believed protocols were an attempt by physicians to limit practice (item 8, -.32). Similarly the greater the number of physicians in the practice, the less the sample believed protocols should be mandated by law (item 2, -.34). The pattern of negative attitudes toward protocols continued when the categories of number of physicians and nurse practitioners per practice was examined.

In summary, the data concerning the attitudes of nurse practitioner participants in the Utah Nurse Practitioner Pilot Project toward the use of protocols were generally negative. Product Moment Correlation Coeffecients and a T test of equality of means were calculated and clarified some variables affecting the participants attitudes.

Discussion of Findings

The investigation assessed the attitudes of nurse practitioner participants in the Nurse Practitioner Pilot Project toward the approved protocols. The attitude items in the questionnaire did not specifically address the approved protocols (Patient Care Guidelines For Family Nurse Practitioners, Hoole A.J. Ed.), but the data elicited should be considered a reflection of attitudes about the Pilot Project approved protocols and addendums. The general finding was that the attitudes of the sample were negative about protocol use regarding the four categories of time factors, individual freedom, intelligence and standards of care. Certain items in the questionnaire were found to temper the negative attitudes and will be discussed in the appropriate section to follow. The following discussion will begin with the demographic data proceeded by the categories of time factors, individual freedom, intelligence and standards of care.

Demographic Data

The educational background of the sample was almost equally divided between nurse practitioners prepared at the masters level (45%), and nurse practitioners prepared at the continuing education

certificate level (43%). Eleven percent were prepared at the baccalaureate level. The educational level reflected the education available within the state over the last decade. The University of Utah offered a continuing education family nurse practitioner program from 1972 to 1976 which became a master's degree program in 1977. Brigham Young University offers an opportunity to become an adult health practitioner prepared at the baccalaureate level and family or specialty nurse practitioner at a master's level.

The sample reflected nurse practitioners with a moderate number of years of practitioner experience (mean 4.9) and the majority (75%) of the sample had previous experience using protocols. The concept of a protocol guided practice was not new to the majority of the Project participants; thus the comments about protocols have credibility based on past experience.

Interestingly 80% of the sample was located in urban settings and most of the Pilot Project participants had daily access to physician consultation. Urban settings offered the nurse practitioner participants ready access to medical specialists and an abundance of client services were available for patient referral. Additionally the nurse practitioner had the opportunity of daily contact with a physician.

The accessible medical expertise and availability of multiple patient referral services eliminates the professional isolation frequently encountered in the rural practice. Therefore the usefulness of protocols may have been questioned by the population sample contributing to the negative attitudes reflected.

The pattern of negative attitudes regarding protocols was maintained when correlation coefficients were calculated. The greater the number of nurse practitioners and physicians per practice, the less positive the sample believed protocol use to be. Similarly, the greater the number of years experience the nurse practitioner participants had, the less value protocols were believed to provide in guiding client health care. Ready access to other professional colleagues in the practice setting may have contributed to the poor attitude reflected about the usefulness of protocols. Professional colleagues may have been consulted directly decreasing the need for written patient care guidelines. The need for written referenced treatment plans which a nurse practitioner had been applying in practice over many years of experience was probably regarded as unnecessary. Project participants with more experience believed written protocols had no value.

Time Factors

The nurse practitioner participants did not believe that the use of protocols saved the practitioner time during the clinical practice day but caused less time to be spent with patients. The published literature did not address the issue of written guidelines promoting efficient utilization of health care providers time, but reported that a nurse practitioner protocol guided practice saved the physician time. (Greenfield et al., 1976; Greenfield et al., 1978; Komaroff et al., 1976). The sample was undecided about protocols maximizing the nurse practitioner's time but agreed that less time was available for patients when protocols were used. The project participants may have believed that the time used to refer to protocols was taken away from the time spent with patients. The sample may not have considered the information the protocols provided worth sacrificing the time spent with patients.

Respondents believed that the greater number of physicians or nurse practitioners per practice the less time saving protocols were for the practitioner. The nurse practitioner may have found consulting with a physician easier and more efficient than referring to written guidelines. Realizing that 75% of the sample had daily contact with a physician lends more

credibility to the explanation. Protocols were not valued as time saving devices for the project participants who had greater nurse practitioner experience. Habitual methods of performing patient care were probably quicker to maintain in a busy clinical practice than referring to written guidelines.

Individual Freedom

The sample agreed that the use of protocols promoted dehumanization of care and individual judgment was not necessary. The findings generally supported Inglefinger's (1973) opinion regarding protocols as stifling and restrictive and the physicians' belief that protocols constrained the opportunity of individualized patient therapy (Grim et al., 1975). However, the strength of this negative attitude was tempered when the correlation coefficients were examined. As the years of experience increased, the less the protocols were considered to promote dehumanization of care. The T-test analysis supported a more positive attitude also, indicating that nurse practitioner participants with prior protocol experience believed protocols to be a basic medical guide while still allowing the freedom of creative health care. The positive finding tended to support Tornyays' (Komaroff, 1977) opinion that protocols free the

nurse practitioner from an over emphasis on technical skills and promote the art in patient care. Nurse practitioners with more experience with protocols were more comfortable and less threatened by a health care guide. Familiarization with protocols allowed the nurse practitioner to incorporate the guide into a personal style of delivering care and allowed creativity.

Intelligence

Protocols were equated with superficial thinking promoting mechanical behavior and were considered insulting to the individual intelligence. The results again supported Inglefinger (1973) who believed protocols implied the practice of medicine required no clinical judgment and could be accomplished by anyone able to read. Lewis and Lewis (1976) also reported that well educated professionals regarded protocols as insulting to competent nurse practitioners and were merely intellectual crutches. The most positive association the study population identified was that joint development of a protocol with physicians, physicians assistants and nurse practitioners increased communication and interdisciplinary understanding among professional colleagues. A similar positive attitude was found with project participants who have had prior

experience with protocols (T-test P. .04). Nurse practitioners with prior protocol experience also believed that specific education was necessary for appropriate use of protocols and that protocols helped to focus the nurse practitioners' thought processes on the appropriate clinical judgment. Many authors cited in the literature believed that the development of protocols provided an educational experience and led to a better understanding of the nurse practitioner role among other professionals (Kómaroff et al., 1974; Paxton et al., 1978; Pearson 1976; Siegel and Bullough 1977). The limited positive attitudes that were found among the Project participants reflected similar opinions.

Interestingly the nurse practitioners with more years of experience did not agree that joint inter-disciplinary protocol development would increase communication between professional colleagues but were less insulted by protocol use. Nurse practitioners with greater experience may have been more competent and secure in the clinical area and less threatened and insulted by the use of protocols. The fact that joint protocol development was not associated with increased communication may have indicated that nurse practitioners have found more effective means of increasing communication among fellow colleagues.

The larger the practice size, i.e., the greater the number of health care providers per practice, the less protocols were believed to be insulting to the nurse practitioner's intelligence. Perhaps nurse practitioners in a larger practice regarded protocols as a means to assure continuity of treatment within the practice, and a protocol was regarded as less insulting.

Standards of Care

The sample did not want protocols mandated by law nor believed protocols assured standards of quality care. The correlation coefficients reflected the same pattern. The project participants believed documentation and accountability improved and valuable information was obtained from protocol use. Government regulation was not a desirable control for this study population in spite of mild agreement that protocols improved documentation and accountability. The literature abounds with documentation of support for protocols to maintain basic standards of quality care, to provide a mechanism for audit of professional performance and to be used as a tool for education of the nurse practitioner (Komaroff et al., 1974; Sox et al., 1973; Grim et al., 1975; Paxton & Scoblic 1978; Pearson 1976). In spite of the support contained

in the literature for protocol guided practice no opinions advocating legislation to require protocols for the practice of nurse practitioners were found. The nurse practitioner Pilot Project participants did not support the opinions of the authors in the results of the research and disagreed that protocols should be mandated by law for a nurse practitioners' practice.

In summary, the sample generally believed protocols were negative in guiding health care practice. Certain variables have softened the attitude in the categories of individual freedom and intelligence. Specifically, the more experience a nurse practitioner had, the less protocols were believed to promote dehumanization of care, insult the intelligence of the practitioner and promote superficial thinking. The larger the practice size, the less insulting protocols were perceived to be.

The major tempering effect for this negative attitude was noted when the significant differences in the mean for attitudes were examined comparing the group of nurse practitioner participants and the group without prior protocol experience. Five items were found to be significant, 2 items in the category of individual freedom and 3 items in the category of intelligence. Nurse practitioners with prior protocol

experience believed protocols provided basic health care guides while allowing individual creativity in care. Nurse practitioners with prior protocol experience believed that communication increased among professionals when protocols were jointly developed. Also, protocols were believed to focus the thought process toward the appropriate clinical judgement while specific educational background was necessary to use protocols appropriately.

CHAPTER VI

SUMMARY AND NURSING IMPLICATIONS

Summary of the Study

Rationale and Objective

Since the nurse practitioner has assumed responsibilities that were traditionally performed only by physicians, protocols were suggested as guidelines to maintain standards of quality health care for nurse practitioners functioning in an expanded role. One responsibility the nurse practitioner is educated to perform which had traditionally only been performed by physicians is prescription writing of drug therapies for clients. Most nurse practitioners have prescribed drug therapies through the physician signing or co-signing the prescription. The State of Utah enacted the Nurse Practitioner Pilot Project Bill which authorized nurse practitioners associated with a physician and guided by approved protocols to prescribe medications for a three year pilot period. Since protocols were used to guide the prescriptive practice of the nurse practitioner participants in the

Pilot Project the attitudes of the project participants toward protocols were considered to be important information to obtain in guiding the development of continued legislation.

To accurately realize the full impact attitudes have on health care provision, a brief review of the theoretical framework is helpful. Attitudes defined by Sims (1981) as the affective component of an individuals' perception of concept were frequently stated to be precursors to behavior. Although in the past much debate over the accuracy of this correlation has occurred, recently Fishbein (1973) argued in support of the attitude behavior relationship, emphazing that an attitude measured must be specific to a behavior observed. Kahle and Berman (1979) have also published a study supporting Fishbein's argument. Empirical data supported by attitude theory existed to strengthen the validity of the attitude behavior relationship. Although a behavior cannot be predicted from the knowledge of a specific attitude, attitudes can be considered to have significant influence on behavior. Nurse practitioner participant's attitudes regarding protocols were considered to be important information to have when evaluating the effectiveness of the Nurse Practitioner Pilot Project. The objective of this study was to describe the attitudes of the

Nurse Practitioner Pilot Project participants toward the approved protocols.

Sample and Methods

The convenient sample encompassed all of the nurse practitioner participants in the Nurse Practitioner Pilot Project and several nurse practitioners who had left the project. The group of nurse practitioners participating in the Project were selected by the Governor's Committee which mailed information and an application form to all nurse practitioners licensed to practice in the State of Utah. The participants who applied and met the committee's criteria were accepted to participate in the Project. The criteria for acceptance included: licensure to practice as a nurse practitioner in the State of Utah, and a current practice as a nurse practitioner in collaboration with a physician in the State of Utah. The total number of questionnaires mailed was 61 and 44 questionnaires were returned. The calculated response rate was 72%.

The study was conducted from November 1981 to April 1982. A questionnaire was mailed to all members of the Pilot Project accompanied by a cover letter of implied consent and a self addressed stamped return envelope. A phone call encouraging a returned

response was made to the participants who did not respond 10 days after the original mailing. Product Moment Correlation Coefficients and a T-test of equality of means were calculated and clarified some variables influencing the participant's attitudes.

Limitations

The findings of the study cannot be generalized to all nurse practitioners, because the small sample size only included the Nurse Practitioner Pilot Project Participants in Utah. The information, however, was representative of the population of nurse practitioners in Utah for which the Pilot Project was created and for whom the potential law that will govern prescriptive practice in Utah will be written.

Generalizability of the results was limited to nurse practitioners participating in the Nurse Practitioner Pilot Project. Additionally the attitudes discovered related to those associated with the protocols contained in Patient Care Guidelines For Family Nurse Practitioners and addendums. However, the results can loosely be generalized to similar populations of nurse practitioners using similar protocols. The protocols are moderate in length, concise and medically conservative representing a format frequently used to guide clinical practice.

The Hawthorne Effect may be relevent to this investigation since the respondents were involved in a broader program: the Nurse Practitioner Pilot Project. The respondents may have been motivated to try to influence the Governors' Committee thus obscuring the true attitudes of nurse practitioners.

Inherent in descriptive research is the relative superficial nature of the data obtained. Questionnaires are more appropriate to obtain quantitative data than qualitative data. For example, an indepth understanding of the causes for the respondents attitudes about protocols was not discernable from the data collected.

Independent variables were not munipulated in the design, therefore control over extraneous variables was lost. Consequently a cause and effect relationship cannot be firmly established between the demographic data and the other results found in the research.

Findings

The demographic data elicited described the sample. The majority practiced in an urban setting (75%). Most of the sample practiced jointly with more than two other professional colleagues and the nurse practitioner participants treated an average of 14 patients per day.

Almost half the sample had master's degrees in nursing (45%) and the other half had certificate preparation (43%) while only 11% had a bachelor of science degree in nursing. Most of the nurse practitioner participants had prior experience with protocols (33%) and the average number of years experience for the sample population was 4.9.

The sample generally believed protocols were negative in guiding health care practice. Certain variables tempered this attitude in the categories of individual freedom and intelligence. Specifically the more nurse practitioner experience acquired, the less protocols promoted dehumanization of care, insulted the intelligence of the nurse practitioner and promoted habitual thinking. The larger the practice size the less insulting protocols were perceived to be.

The major tempering effect for this negative attitude was noted when the significant differences in the attitude means were examined comparing the nurse practitioner group with prior protocol experience and the group without prior protocol experience. Five items were found to be significant, two items in the category of individual freedom and three items in the category of intelligence. Nurse practitioners with prior protocol experience believed protocols provided basic health care guides while allowing in-

dividual creativity in health care. Nurse practitioners with prior protocol experience belived that communication and interdisciplinary understanding increased among professionals when protocols were jointly developed. Protocols were believed to focus the thought process toward appropriate clinical judgement while specific education background was deemed necessary to use protocols appropriately.

Implications for Further Research

Frequently a research project produces more questions than it answers and this attitude assessment of the Nurse Practitioner Pilot Project participants is no exception. Several areas were uncovered which have implications for further research.

A sample size of 44 participants represented only a fraction of the entire population of nurse practitioners practicing in this country today and the research needs to be repeated with a larger sample size more representative of a cross section of nurse practitioners. States that have already mandated that nurse practitioners have protocols to guide patient care could contribute a wealth of information about this form of health care guidance. Research encompassing a larger random sample would more accurately represent the attitudes of the national

population of nurse practitioners.

The impact of protocol attitudes on the behavior of nurse practitioners had not been examined. Nurse practitioner compliance to protocols as guidelines to patient care needs to be documented through behavioral studies. Research designed to measure nurse practitioners' behavioral compliance to protocols as guidelines for patient care correlated with nurse practitioners' attitudes regarding protocols is needed.

Competent nurse practitioners are aware of the professional abilities and limitations regarding the complexity of health care management. The nurse practitioner should limit clinical practice to health care problems that the nurse practitioner is capable of handling. The findings documented that the sample agreed that protocols were insulting to the intelligence of the health care professional. This finding may reflect the sample resentment toward an implication that the practice of nurse practitioners requires regulation beyond the limits imposed by the conscience of the nurse practitioner. The fact that protocols were required by law to guide prescriptive practice for the Pilot Project participants implied that the sample population's clinical practice needs regulation. Research documenting nurse practitioners attitudes regarding regulation of clinical practice would be

valuable. Such research should direct professional support for proposed legislation.

Implications for Nursing Practice

Since the nurse practitioner performs some of the functions that traditionally were provided by physicians, protocols have been suggested as guidelines to maintain standards of health care for nurse practitioners functioning in an expanded role. The pressure to regulate physician extenders, legislatively, as nurse practitioners and physicians assistants are frequently called, mounts yearly in state governments. Already California, Tennessee, Idaho, and Washington have legislative mandates which reguire nurse practitioners to have policies and protocols developed to perform traditional medical tasks (Siegel & Bullough 1977). It is crucial that nurse practitioners become politically active to guide proposed laws regulating nurse practitioners' practice.

Because of the negative attitude nurse practitioner participants in the Pilot Project demonstrated toward protocols and assuming that attitudes have a major impact on behavior, several issues arise that have implications for nursing practice. First, nurse practitioner support in Utah for a future law which would mandate protocols to guide prescriptive practice

may be questioned. However, the results of the study alone cannot predict the behavior of the nurse practitioner participants. Many other variables in addition to attitudes regarding protocols become significant when considering nurse practitioner support for such a law. For example, if protocols are considered necessary for the provision of standards of health care and to provide medical guidance by other concerned individuals such as physicians, pharmacists or health care consumers, then the legalizing of prescriptive practice for nurse practitioners without protocols for guidance may be impossible.

The second issue that arises concerns adherence to the approved protocols. Since the nurse practitioner participants do not regard the approved protocols positively, and assuming negative attitudes may impact behavior, the utilization of protocols by the Pilot Project participants for practice guidance may be questionable. The use of protocols as guides to prescriptive practice for nurse practitioners in the State of Utah needs to be reexamined.

The third issue that arises concerns the more positive attitudes reflected in the findings. The fact that nurse practitioners with prior protocol ex-

perience had a more positive attitude regarding the use of protocols was encouraging. The negative attitudes regarding protocol use found in the research reflected the attitudes of the nurse practitioners who have used protocols only a short period of time. Therefore attitudes regarding protocols may become significantly more positive when the nurse practitioners have used the approved protocols for a longer period of time.

Laws which would provide guidelines for practice, assurance of quality of care and support for professional development of the nurse practitioner need to be written. It may be crucial that nurse practitioners' attitudes toward protocol use be more positive before such legislation is proposed.

APPENDIX

Please provide the following information regarding your situation:

1. Educational Background:

   A. _____ B.S.

   B. _____ Diploma

   C. _____ Certificate

   D. _____ M.S.

2. Years experience as a nurse practitioner:_____

3. Practice setting: population_____

4. Have you had experience with the use of protocols prior to this project?

   Yes _____ No _____

5. Approximately how many patients per day do you treat as a nurse practitioner?_____

6. How frequently do you have contact with physician(s) in the practice? (For example, daily, weekly, monthly, bimonthly).

   _____

7. How many total nurse practitioners, physicians assistants or physicians are in the practice?_____

* *

Directions: Please place a "✓" in the space following each statement which best tells how you feel about the statement.

	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree
1. Written protocols are efficient and time saving for the practitioner.	1	2	3	4	5	6	7		
2. Written protocols should be mandated by law for practicing nurse practitioners.	1	2	3	4	5	6	7		

	Strongly Disagree		Disagree		Undecided	Agree	Strongly Agree
3. Clinical protocols are constraining to a dynamic and creative practitioner.	1	2	3	4	5	6	7
4. The use of protocols is insulting to a nurse practitioner's intelligence.	1	2	3	4	5	6	7
5. Protocol use allows the practitioner to practice the art of caring for patients without the constraint of undue emphasis on technical aspects of care.	1	2	3	4	5	6	7
6. Uncaring robots are the end product of a protocol guided practice.	1	2	3	4	5	6	7
7. Protocols augment the education of the nurse practitioner.	1	2	3	4	5	6	7
8. Protocols represent an attempt by physicians to limit nurse practitioners in their legitimate use of clinical judgment.	1	2	3	4	5	6	7
9. Developing a protocol in combination with other health care professionals (MD's or PA's) increases communication and understanding among the professions.	1	2	3	4	5	6	7
10. A protocol guided practice results in decreased time spent with patients.	1	2	3	4	5	6	7
11. Protocols help to focus and guide your thought process toward clinical judgment.	1	2	3	4	5	6	7
12. It would be better to have no protocols at all than protocols that must be rigidly adhered to.	1	2	3	4	5	6	7
13. Protocols imply mindless thinking behind mechanical behavior.	1	2	3	4	5	6	7

	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree
14. Protocols can be thought of as trusted and experienced mentors constantly available to the practitioner.	1	2	3	4	5	6	7		
15. Nurse practitioners need thorough educational training in order to interpret and use protocols appropriately.	1	2	3	4	5	6	7		
16. Protocols free the nurse practitioner from worry over missing an important cue.	1	2	3	4	5	6	7		
17. Written protocols create a false sense of security for the practitioner.	1	2	3	4	5	6	7		
18. Protocols represent an attempt by the medical community to develop and legitimize the nurse practitioner role.	1	2	3	4	5	6	7		
19. Individual judgment is not necessary with use of protocols.	1	2	3	4	5	6	7		
20. Valuable information can be obtained by protocol use.	1	2	3	4	5	6	7		
21. Protocols are helpful in accurate documentation and accountability.	1	2	3	4	5	6	7		
22. Protocols allow for an efficient quick reference supporting a faster flow of patients.	1	2	3	4	5	6	7		
23. Protocol use for clinical practice promotes dehumanization of care.	1	2	3	4	5	6	7		
24. The use of protocols encourages a cookbook approach to health care.	1	2	3	4	5	6	7		
25. High standards of care are assured with the use of protocols.	1	2	3	4	5	6	7		

	Strongly Disagree		Disagree		Undecided		Agree	Strongly Agree
26. Use of protocols increases paperwork time.	1	2	3	4	5	6	7	
27. I am concerned that protocols will become a substitute for formal educational training.	1	2	3	4	5	6	7	
28. While serving as a guide to basic medical facts, protocols allow creativity for nursing care.	1	2	3	4	5	6	7	
29. Practice guided by protocols forces nurse practitioners into a predetermined mode of operation thus stiffling their clinical judgments.	1	2	3	4	5	6	7	
30. The use of protocols places all nurse practitioners at the same level without concern for education, experience and expertise.	1	2	3	4	5	6	7	

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